

REMARKS

Claims 1 and 3-12 are all the claims pending in the application. Claim 1 has been amended to incorporate the subject matter of claim 2, which has been canceled.

Entry of the above amendments is respectfully requested.

Claim 1 recites a process for producing a cold-rolled ferritic/martensitic dual-phase steel strip, wherein a slab, the chemical composition of which comprises, by weight:

$$0.020\% \leq C \leq 0.060\%$$

$$0.300\% \leq Mn \leq 0.500\%$$

$$0.010\% \leq Cr \leq 1.0\%$$

$$0.010\% \leq Si \leq 0.50\%$$

$$0.010\% \leq P \leq 0.100\%$$

$$0.010\% \leq Al \leq 0.10\%$$

$$N \leq 0.010\%$$

the balance being iron and impurities resulting from the smelting, is hot rolled, said process then comprising: coiling the hot-rolled strip obtained at a temperature of between 550 and 850°C; then cold rolling the strip with a reduction ratio of between 60 and 90%; then annealing the strip continuously in the intercritical range; and cooling it down to the ambient temperature in one or more steps, the cooling rate between 600°C and the ambient temperature being between 100°C/s and 1500°C/s; and optionally tempering it at a temperature less than 250°C, the annealing and cooling operations being carried out in such a way that the strip finally contains from 1 to 15% martensite.

It is submitted that the claimed method is not taught or suggested by the cited art.

Nakaoka and the claimed method differ in at least the content of Mn. Nakaoka discloses a Mn content of 0.06 to 0.25%, which outside the claimed range of 0.3 to 0.5%. Specifically,

Nakaoka discloses that "Manganese has an important effect particularly on Lankford value (r) of steel sheet.... As is clear from Fig. 1, with a manganese content of over 0.25 wt %, the Lankford value (r) seriously decreases to below the target limit of 1.4. The manganese content should therefore be within the range of from 0.06 to 0.25 wt%". See col. 6, lines 19-38.

In addition, a person of ordinary skill in the art would not be motivated to adjust the amount of Mn to arrive at the claimed range. Turning to Fig. 1 of Nakaoka, when the amount of Mn is extrapolated beyond 0.30%, the value of (r) drops below 1. Thus, it is submitted that a person of ordinary skill in the art would not increase the amount of Mn to arrive at the claimed range.

Furthermore, in the present invention, steel with a high r is desired. See [0004]; [0049] (in particular with $r > 1.1$); [0059] and Fig. 1. However, based on Nakaoka, a person of ordinary skill in the art would limit the amount of Mn (e.g., reduce) in order to obtain a higher r value. Surprisingly, the present invention achieves high r values when higher amounts of Mn is used. Such effect would have been unexpected to a person of ordinary skill in the art.

Chatfield discloses steels having much higher amounts of Mn, specifically 1.25-1.8%, which is outside the claimed range. See col. 1, line 41 and col. 2, line 10. It is submitted that a person of ordinary skill in the art would not be led to lower the amount of Mn of Chatfield to arrive at the claimed range.

Moreover, a person of ordinary skill in the art would not modify the amount of Mn in Nakaoka based on Chatfield for the reasons discussed above. That is, Nakaoka teaches that when the Mn content of over 0.25 wt %, the Lankford value (r) seriously decreases to below the target limit of 1.4, and thus a person of ordinary skill in the art would not increase the amount of Mn in Nakaoka to arrive at the claimed range of Mn.

Finally, the C content in Chatfield is 0.08-0.12%, which is significantly higher than the claimed range of C. See col. 1, line 41 and col. 2, lines 9-10.

For at least the foregoing reasons, it is submitted that Nakaoka and Chatfield fail to render the present invention according to claim 1 obvious. Thus, it is submitted that claim 1 is patentable over the cited art.

In addition, claims 3-12 depend from claim 1, and thus it is submitted that these claims are patentable for at least the same reasons as claim 1.

In view of the above, reconsideration and allowance of claims 1 and 3-12 is respectfully requested.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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Respectfully submitted,

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